

Running head: UTILIZING FIRE AND EMS SERVICES IN THE TOWN

Executive Leadership

Utilizing Fire and EMS Resources More Efficiently

In the Town of Ledyard

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____

Abstract

The Fire and Emergency Medical Services (EMS) system in the Town of Ledyard, Connecticut is comprised of two combination (volunteer and paid) fire departments and one combination ambulance service. Each of these departments has a separate operational philosophy, policies, and financial reporting chain, among other unique characteristics. The problem was that the separation of the fire service and emergency medical service in the Town of Ledyard has resulted in an inefficient use of equipment and personnel along with a high rate of delayed or missed EMS calls for service. The purpose of this research was to identify and implement methods that fire and emergency medical services can work together to provide a more efficient use of resources and meet the demands of EMS calls for service.

The action research method was utilized and the following research questions were developed:

1. What are the benefits to the Town of Ledyard for the more efficient use of Fire and EMS resources?
2. In what ways can the Fire and EMS services work together to achieve better efficiency and use of resources?
3. What have other area towns in Eastern Connecticut done to streamline Fire and EMS services?
4. What are the potential problems with Fire and EMS services working together in the Town of Ledyard?

Procedures for the research project included a review of current relevant literature, a survey of Eastern Connecticut Fire and EMS service leadership, personal interviews with Town of Ledyard Fire and EMS service leaders, and collection and analysis of local Fire and EMS response data.

Results indicated that there are substantial benefits to combining the use of Fire and EMS resources that provide an increase level of service delivery and efficiency. It was recommended that agency leaders, agency membership, town leaders, and mutual aid partners all work together and form a comprehensive implementation plan.

TABLE OF CONTENTS

Abstract.....3

Table of Contents.....5

Introduction.....6

Background and Significance.....7

Literature Review.....12

Procedures.....18

Results.....21

Discussion.....27

Recommendations.....31

Reference List.....33

Appendix A: Survey Cover Letter.....35

Appendix B: Fire and EMS Resource Utilization Survey.....36

Appendix C: Personal Interviews.....39

Appendix D: Historical EMS Response Data.....43

Appendix E: Draft Action Plan.....44

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Introduction

Similar to communities across the nation, the Ledyard Fire Company, District No. 1, struggles to meet the demand for service in times of limited budgets, limited personnel (both full-time and volunteer), and the ever-expanding roles and responsibilities placed on first responders. In the Town of Ledyard, there are two combination fire departments and one combination ambulance department. The term combination describes the makeup of the organization with respect to full-time and volunteer personnel. In Ledyard, volunteers make up the majority of the first responders, including all leadership and management positions.

Several years ago, the Ledyard Fire Company and the Ledyard Volunteer Emergency Squad (LVES), which is the town's primary provider for emergency medical services (EMS), moved into a new emergency services building. This arrangement enlightened the problem that has and continues to exist with EMS service in the town and is the subject of focus for this research paper. The problem is that the separation of fire and emergency medical services in the Town of Ledyard has resulted in an inefficient use of equipment and personnel along with a high rate of delayed or missed EMS calls for service. The purpose of this research is to identify and implement methods that the Fire

and EMS services can work together to provide a more efficient use of resources to meet the demands of EMS calls for service.

Action research was used for this project and the following questions were framed and answered:

1. What are the benefits to the Town of Ledyard for the more efficient use of fire and EMS resources?
2. In what ways can the fire and EMS services work together to achieve better efficiency and use of resources?
3. What have other area towns in Eastern Connecticut done to streamline fire and EMS services?
4. What are the potential problems with fire and EMS services working together in the Town of Ledyard?

Background and Significance

One of the most challenging job functions today's fire service leader is the ability to do "more with less." This term defines the mission of the fire service by providing expanded types of emergency routine services to our communities with less local financial support. This concept impacts day-to-day operations as well as long term planning needs. Salaries and benefits for full-time personnel, incentives for volunteer personnel, basic operational equipment, and capital needs are all affected by this methodology. Nevertheless, the public demands and expects the fire service to be there in the time of need.

The justification for this study was exemplified with the occupancy of a new, shared emergency services building in January, 2005. This new facility is now home to three agencies, which include the Ledyard Fire Company, District No. 1, Inc., The Ledyard Volunteer Emergency Squad (LVES), and the Ledyard Fire Marshal's Office. The philosophy of the emergency services building was to construct a multi-purpose facility that would combine the aforementioned public safety agencies, into a single, shared, centrally located building. Prior to this move, each of these agencies operated from separate facilities.

In the Town of Ledyard, the Ledyard Volunteer Emergency Squad (commonly known as Ledyard Ambulance or LVES) holds the state license to provide both basic life support (BLS) transport service and first responder (R1) service. Ledyard Ambulance accomplishes this mission with two ambulances, two full-time paid emergency medical technicians, and volunteer personnel. There are two fire companies in Ledyard, each serving their established district. Both fire companies hold state licenses as supplemental first responders (SFR) for emergency medical services. The fire company's work together with Ledyard Ambulance to supplement personnel and equipment at emergency medical incidents to stabilize patients until the transport unit arrives. This formal relationship has existed for the last ten years and has provided an increase in patient care delivery.

Both the Ledyard Fire Company and Ledyard Ambulance operate independent of one another. Each has its own leadership structure, policies and operating guidelines, and budget. When

the emergency services building was occupied in 2005, the Mayor designated the Fire Company as the agency responsible for the day-to-day operations of the building. This resulted in a significant increase in the Fire Company operating budget and additional responsibilities of the Fire Chief, who is the department head. As primarily volunteer organizations, the number of volunteers at any given time fluctuates and can have a significant impact on the ability to provide efficient and reliable service. Since both the Ledyard Fire Company and Ledyard Ambulance were now sharing a building, it became apparent that a problem existed that was having financial and patient care implications.

The concerns of this Fire Chief are from both an operational and financial perspective for the Fire Company and the Town of Ledyard. Operationally, the Fire Company is simultaneously dispatched to emergency medical service calls with the ambulance for all vehicle rescues and certain life-threatening criteria (i.e. chest pains, difficulty breathing, etc.) and dispatched to all emergency medical service calls when the ambulance is unable to assemble a crew and an out of town (mutual aid) ambulance must respond, thus delaying patient transport. This has created an increased burden on Fire Company personnel to expand into a new mission of providing additional EMS services without any increase in personnel, equipment, or financial support. The second concern is from a financial perspective, both for the individual organizations and for the town as a whole. First, both the Fire Company and the Ambulance have separate budgets.

There is a duplicative effort and a loss in financial prudence with the purchase of operating supplies, fleet maintenance, and personnel administration. Additionally, it burdens town finance officials with administering two separate budgets. The second financial issue is ambulance service billing. The ambulance bills for service, whereas the fire department does not. The money collected from ambulance billing is deposited into a special town capital fund to replace ambulance equipment (vehicles, defibrillators, etc.). Billing is administered by a volunteer appointed by the Ambulance Director, who functions as the department head. Recently, the town lost a significant amount of projected revenue due to a failure in submitting billing paperwork in a timely fashion.

Collaboration and team work are words that describe a successful organization. Now that both the Ledyard Fire Company and Ledyard Ambulance share an operating facility, it is time to look at ways that both organizations can better work together to achieve increased interoperability, financial responsibility, and most importantly, improved service to our customers. These are all possible if a "buy-in" commitment from all stakeholders is realized. Differences in operational philosophies, policies, guidelines, and leadership attitudes will need to be set aside for success.

This research project is correlated with two United States Fire Administration operational objectives. First, "To promote within communities a comprehensive, multihazard risk reduction plan led by the fire service organization," and second, "To

respond appropriately in a timely manner to emerging issues." (United States Fire Administration, 2003, p. II-2). As a product of the research, an action plan and timeline will be developed to provide the framework for a more efficient use of resources and meet the demands of EMS calls for service.

This research topic has direct linkage to many of the units covered in the National Fire Academy Course *Executive Leadership*. The ability to remove political influences from day-to-day operations of the fire department and demonstrate extraordinary executive leadership skills will be crucial to increasing more efficient use of fire and EMS resources in the Town of Ledyard. Specific sections within the *Executive Leadership* course that are applicable include Unit 1, *Working as a Team*, Unit 4, *Managing Creativity*, Unit 5, *Following and Leading*, and Unit 10, *Service Quality/Marketing*. These units all address the principles and concepts that will allow this Fire Chief to bring together and achieve buy-in from emergency services department heads, elected officials, and town citizens to foster this partnership and improve service to our customers. In the *Working as a Team* unit, topics of achieving consensus and soliciting feedback (National Fire Academy [NFA], 1998, chap. 1, p. 23-31) are covered and have a direct correlation to making the outcome of this research project a success. In Unit 10, *Service Quality/Marketing* (National Fire Academy [NFA], 1998, chap. 10, p. 3-7), the goal of providing quality service to the customer, namely the public that we serve, is relevant not only

to this research topic, but should be a focus of every fire service leader on a day-to-day basis.

Literature Review

As an integral part all research projects, a comprehensive literature review was conducted. The majority of material was harnessed through visits to the National Fire Academy's Learning Research Center (LRC) and through interlibrary loan. Relevant publications included selected journal articles, professional publications, and applied research projects.

During the literature review, this researcher found a striking and re-occurring theme from what others have written. One of the biggest challenges facing fire and EMS entities collaborating and sharing responsibilities are the apparent cultural differences that exist between the two groups. These differences seem not to be a local, state, or national problem, but a global one. The literature was quite clear in this area. Weiss stated "The core of all fire departments is the unique work group called a 'company.'" He continues by saying "A firefighter's company can be viewed as an extension of his family...The fire officer takes a parental role in the company/family...Everything is done as a company...Firefighters eat, sleep, and work together...Operational logic may be behind keeping the company together, but it yields greater rewards. It creates a more cohesive team." (Weiss, 1998, p. 74-76). Contrast this with the Emergency Medical Services (EMS) culture that Weiss

explains: "Independence is the fundamental assumption of the EMS culture...they are trained to act independently...teamwork is not important...the nature of the EMTs and paramedics work demands that they be aggressively independent. They are specifically trained to challenge authority to benefit their patients...The milieu of this EMS would be defined as *aggressively defensive*." (Weiss, 1998, p. 76-78). This leads to a significant challenge on merging these cultures together to accomplish the intended result of this research project.

Research findings of call volume trends for both Fire and EMS disciplines also appears to play a significant role merging these two operations. Greiff states "Nationwide, the number of fires has decreased significantly...while still important, fire suppression is no longer the exclusive focus for most departments...to maintain staffing levels and ensure their continued survival, departments are seeking new roles in hazmat response and stabilization, extrication and technical rescue, and emergency medical services." (Greiff, 1999, p. 45). This operational trend in the fire service drastically contrasts with that of the current EMS philosophy, as Greiff continues, "...The number of EMS responses has soared nationwide...EMS has grown into one of the country's busiest emergency services...This upward trend in EMS responses has created a demand for services and a need for additional responders." (Greiff, 1999, p. 45).

Although the literature indicates that there are a variety of challenges relative to sharing or merging Fire and EMS resources, there are many positive impacts that result, of which

have been written by others extensively. This researcher found many published Applied Research Projects detailing local jurisdictions experiences with the problems that face EMS and Fire Service operations. These ARPs detailed how they have been able to overcome challenges at various levels, up to, and including a complete consolidation of services.

Operational outcomes, political concerns, and financial ramifications were all important points addressed in Doyle's ARP, addressing consolidation of Fire and EMS services in Lockhart, Texas. Regarding service outcomes, Doyle writes "...A decrease in the average response time for basic-life support incidents and the availability of more personnel at the scene of an emergency incident sooner." (Doyle, 2006, p. 31). On the political side, he continues "...Political ramifications would be that of a decrease in the quality of service provided and whether or not there would be any significant savings to the taxpayers...much consideration would have to be given to both areas prior to a final decision being reached as to the feasibility of consolidating..." (Doyle, 2006, p. 31-32). Last, with respect to financial savings, Doyle states "...The money saved in overtime incurred by converting EMS personnel to full-time Firefighters...There would also be some savings attributed to the combining of services in respect to overall operational costs, that would be evident by elimination of duplication of supplies purchased individually by each department prior to the consolidation." (Doyle, 2006, p. 32). Doyle also makes a comparison of increased training costs compared to overtime

savings "Any anticipated increased costs in training for personnel to meet minimum certification requirements in both Fire and EMS disciplines would not outweigh the anticipated savings from the overtime alone." (Doyle, 2006, p. 32).

The literature review found that others who have written about this topic constructed similar research questions and answered them in a consistent manner. In his ARP, Jensen describes the results of consolidating Fire and EMS for Rock County, Wisconsin, a vastly different geographical location from Doyle's research in Lockhart, Texas. Jensen addresses financial savings and political issues as two of his results. In reference to financial savings, from survey results, Jensen writes "Regarding the duplication of services and savings on capital expenditures, 59% of the total respondents to these statements agreed that consolidation would be beneficial." (Jensen, 2003, p. 34). With respect to political concerns, Jensen reports that "When asked if they felt that consolidation would be accepted politically at this time, 43% of the elected and municipal officials said no, 39% were not sure, and 17% agreed somewhat that it would...At this time, research does not suggest that a complete operational consolidation would be politically feasible. It would be appropriate, however, to expand and further develop functional cooperation within the county." (Jensen, 2003, p. 37-38).

A 2002 study conducted by the State of Pennsylvania addressed the volunteer Fire and Emergency Medical Services within the state. Several of the results are worth noting.

First, as the report indicates "A recent study conducted by the National Fire Protection Association estimates that nearly 73% of all fire departments in the country are staffed entirely by volunteers and mostly volunteers staff an additional 15% of fire departments." (U.S. Fire Department Profile Through 2000, National Fire Protection Association as cited in Pennsylvania Emergency Management Agency, 2003, p. 8). One of the major components of the study was mergers and consolidations at various levels. In the study, resistance is cited as an obstacle to this end. The study reports "The reasons for this resistance include the long-standing traditions, the lack of any incentives, inadequate communications between local government officials and emergency services leaders, a dearth of plans for community fire protection and the fact that the public is not questioning the efficiency and effectiveness of the service they are receiving." (Pennsylvania Emergency Management Agency, 2003, p. 33). The study realized the opportunities for such mergers and consolidations among departments and said "There should be a systematic approach to identifying and providing tangible benefits...to fire services and communities undertaking mergers, consolidations...utilizing common procedures and with cross-response capabilities." (Pennsylvania Emergency Management Agency, 2003, p. 34).

The literature review revealed that combining Fire and EMS services extends beyond the borders of our country. For example, in Britain, Burnett states "The ambulance service, for the most part, is trying to meet increases in demand with little

outside help, while at the same time, desperately trying to keep the Fire service and physicians at bay." (Burnett, 1999, p. 17). Burnett addresses why a fire-based EMS system would be beneficial for Britain and cites many of the same issues reviewed from writers in the United States. However, Burnett makes a bold statement in his writing, stating "A fully integrated fire-based EMS system in England and Wales could save up to 18,000 more lives each year." (Burnett, 1999, p. 18). He substantiates his claim by saying "Cardiac arrest represents the best opportunity to gauge the effectiveness of the ambulance services. Yes its argument against fire-based EMS, the Ambulance Service states that cardiac arrest represents only two percent of its total call volume...Less than five percent (or 3,000 lives) will be saved...This is compared to some parts of the United States with fire-based EMS systems that have survival rates of 17 percent, to as high as 35 percent." (Burnett, 1999, p. 18). Although cost savings, political concerns, and more efficient use of resources are all valid talking points, Burnett reminds us that saving lives is the most important outcome of any consolidation, merger, or operational change for Fire and EMS services, regardless of location.

The literature review produced a significant amount of findings on Fire and EMS resource utilization. Whether it be a major U.S. metropolitan area comprised of a large municipal fire department and commercial ambulance service, a small rural community with all volunteer first responders or a department from across our borders, the same recurring themes surfaced when

evaluating research gathered. Cost savings, political concerns of elected officials, merging cultural differences, and improved service delivery all were overarching priorities among the literature reviewed.

Procedures

For this research, the action method was chosen. Research material was obtained from a multitude of sources, including:

1. A comprehensive literature review consisting of professional journals, periodicals, and Applied Research Projects through the Learning Resource Center (LRC) at the National Fire Academy (NFA) and through inter-library loan.
2. Development and distribution of a cover letter with a Fire and EMS Resource Utilization Survey requesting any written policies, procedures, standards, operating guidelines, etc. (Appendix A).
3. A Fire Resource Utilization Survey (Appendix B).
4. Personal interviews with local Fire and EMS service leaders (Appendix C).
5. Analysis of local EMS response data over a five-year period (Appendix D).

Fire and EMS Resource Utilization Survey

A written survey instrument, together with a cover letter were developed and distributed to all Fire Chiefs in the

Counties of New London and Windham. A total of eighty-eight (88) surveys were distributed, with the goal of reaching all departments in Eastern Connecticut. The cover letter detailed the purpose of the survey, an overview of the survey makeup, the goals of the survey, the option of each recipient to provide additional information, and instructions for each recipient to obtain a copy of the survey results. Each survey package included a postage-paid return envelope, along with a specified return date. Appendices A and B include a copy of the cover letter and survey instrument.

Out of eighty-eight (88) surveys distributed, thirty-nine (39) were completed and returned, equating to a forty-four percent (44%) return rate. The survey provided this researcher the opportunity to obtain local, relevant data relating to aid in answering the research questions. The survey helped to address the following inquiries about local departments:

1. What, if any, EMS services does your agency provide?
2. Percentage of total call volume comprised of EMS responses;
3. Benefits and disadvantages of combining Fire and EMS;
4. How do Fire and EMS presently work together and are they cross-trained to provide both services?
5. Which provider is most capable of providing the best EMS service in the community?

Personal Interviews

Four (4) in-person interviews were conducted with local Fire and EMS service leaders. Two (2) interviews were conducted with the Director and Assistant Director of the Ledyard Volunteer Emergency Squad, also known as LVES, which is the EMS transport provider for the Town of Ledyard. The remaining two (2) interviews were conducted with the Fire Chief and Assistant Chief of the Gales Ferry Volunteer Fire Company, which is the second Fire Department within the Town of Ledyard that serves District No. 2.

All of the interviews were conducted by this researcher at the respective departments' building, each lasting approximately fifteen (15) to twenty (20) minutes. A total of four (4) pre-determined questions were asked of each interviewee. Each person was asked the same questions. Appendix C provides the interview questions and responses for each interview.

Local EMS Data

This researcher queried local emergency dispatch center records for local EMS response data from the years 2002 through 2006. The data was used to aid this researcher answer the relevant research questions. Appendix D displays a summary of the relevant data in tabular format.

Limitations

Limitations existed in a several areas. First, with respect to the survey, only Fire Departments were sampled. Although the majority of these departments are the EMS transport agency for their respective community, there are some primary EMS departments that were not sampled. Second, the survey cover letter inadvertently listed the relevant NFA course as *Executive Development* instead of *Executive Leadership* (Corrected in Appendix A). Third, the survey return rate was thirty-nine percent (39); lower than what this researcher expected. Fourth, only Eastern Connecticut Counties were surveyed. For the personal interviews, two limiting factors are worth mentioning. First, a more diverse number of interviews could have been conducted, and not just within the Town of Ledyard. Second, the interviews were short in length and only addressed narrowly pre-selected questions.

Results

What are the benefits to the Town of Ledyard for the more efficient use of Fire and EMS resources?

This research question was answered by the survey instrument, question five and supported by local EMS statistical data. Survey question five asked respondents "What is/are the benefit(s) to combined fire and emergency medical resources in

your organization (check all that apply)." There were five multiple choice answers, including "Other" and "None." The results are as follows:

- A. More efficient use of personnel - 5
 - B. Under one department - 4
 - C. Revenue generated by ambulance billing - 1
 - D. Uniform policies and procedure applicable to all personnel
- 2
 - E. Other: - 3
-

F. None - 2

The majority of the participants selected multiple benefits, with fifteen of the respondents selecting three or all of the first four choices (A - D) above. Multiple write in responses were given. As an example, a respondent indicated that as a first responder, we can get to the patient before the ambulance arrives and start care. Another respondent indicated factors such as teamwork, synergy, quicker recognition of hazards/issues, more experienced and diverse staff, and public relations were all benefits to combined Fire and EMS resources.

The compilation of EMS response statistical data over the period of years 2002 through 2006 indicates that the average response time for an ambulance to reach a patient in the Town of Ledyard took about 16 minutes and 30 seconds. Contrast this with the average response time of the fire department to arrive as a first responder within about 8 minutes and 30 seconds. This

represents a 50% earlier arrival by fire department first responders.

In what ways can the Fire and EMS services work together to achieve better efficiency and use of resources?

This question was answered by survey instrument question seven and personal interview question one. Survey question seven asked "In what ways can fire and emergency medical services organizations work better together to achieve a more efficient use of resources? (circle all that apply)." The following results were recorded:

- A. Effective leadership and support from city/town officials
- 0
- B. Multi-agency training - 3
- C. Common goals and objectives - 7
- D. Long term planning - 1
- E. Other - 2

Fifteen of the thirty-nine respondents selected "Common goals and objectives" or a combination of leadership, support, training, common goals/objectives, and long term planning as ways the agencies can work better together.

Question one of the personal interview asked each subject "In what ways can Fire and EMS better work together in the Town of Ledyard?" Respondents all answered with strong, common themes. These included mutual respect, communication, trust between groups, common operating guidelines, and training. One

respondent indicated that a board of fire commissioners be established to oversee both agencies.

What have other area towns in Eastern Connecticut done to streamline Fire and EMS services?

This research question is answered through survey instrument questions eight and nine. Survey question eight asked "In your community, are firefighters cross-trained for both fire and ambulance duty?" The answers were as follows:

- A. Yes - All personnel are cross-trained - 4
- B. Yes - 50% or more personnel are cross-trained - 13
- C. Yes - Less than 50% of personnel are cross-trained - 15
- D. No - No personnel are cross-trained - 4

An overwhelming majority indicated that at least some of their personnel were cross-trained to perform the duties of both disciplines. Only four of the thirty-nine respondents indicated that either all personnel were cross-trained or that no personnel were cross trained.

Survey question nine stated "In your community, do fire and emergency medical services personnel work as a cohesive team, with a shared vision?" This question is appropriate from the perspective that having two separate but distinct groups of personnel working together in a positive manner can only help to streamline both services. The following answers were tabulated:

- A. Yes, all of the time - 10
- B. Yes, most of the time - 25

- C. No, rarely - 0
 - D. No, not at all - 1
 - E. Other: - 0
-

For this question, the majority of the respondents indicated that in their communities Fire and EMS agencies worked well together either most or all of the time. It is important to note that only one respondent stated and the two agencies do not work together well at all.

What are the potential problems with Fire and EMS services working together in the Town of Ledyard?

This final research question was answered by instrument survey question six, personal interview question two, and local EMS response statistical data. Survey question six asked "What is/are the disadvantage(s) to combined fire and emergency medical services resources in your organization? (circle all that apply)." The question yielded the following results:

- A. Increased liability - 1
 - B. Resources spread too thin - 4
 - C. Certification/training requirements - 5
 - D. Record keeping - 1
 - E. Other: - 1
-

- F. None - 17

Just under half of the respondents (17) indicated that there were no disadvantages to combining Fire and EMS resources in their respective organizations. Only a small number of individuals reported issues such as training requirements and spreading resources too thin as problems or disadvantages to combining Fire and EMS resources.

Personal interview question two asked "What are the challenges of Fire and EMS services working together in the Town of Ledyard?" Those interviewed were concerned with bringing different personality levels together, people's perception of who is in control, maintaining/supplying resources, additional growth, and the eroding volunteer base without incentives to retain volunteers.

Local EMS response statistics reveal that over a five year period, the Ledyard Volunteer Emergency Squad averaged 682 calls for service per year. Out of this number, 100 calls or 15% needed mutual aid due to various reasons. These numbers are important to issues involving Fire and EMS agencies working together in Ledyard, as whenever a missed call occurs, the Fire Department is dispatched automatically as a first responder, until an out of town ambulance arrives for transport. The impact on the Fire Department can cause tension between agencies and will be discussed further in the following two sections of this research paper.

Discussion

As Chief of Department from May, 1999 through January, 2007, one of the most challenging parts of my job has been to recognize the many different organizations that make up the emergency response force for the Town of Ledyard. In my community we have two fire departments, an ambulance department, fire marshal office, emergency management office, and police department. All of these agencies are independent of one another and have their own unique operating and leadership structure. As a fairly educated and progressive chief officer, it can, at times, be frustrating to realize that one must be sensitive to all departments when proposing new initiatives, recommending changes in operational procedures, or suggesting and/or implementing methods to improve service delivery.

This research topic was chosen as major event occurred that brought the issue to the forefront. In January, 2005, the Ledyard Fire Company, the Ledyard Volunteer Emergency Squad (LVES), and the Ledyard Fire Marshal's Office all moved into a new, state of the art Emergency Services Facility. Up until this time, all three agencies were located in different buildings and rarely had close day-to-day interaction, with the exception of emergency call responses. Several realizations came to the forefront once the Ledyard Fire Company and Ledyard Ambulance co-existed in a new facility. It was clear that resources, including equipment and personnel were not being managed

efficiently. For example, separate budgets exist for both agencies and many EMS supplies were being redundantly purchased by both agencies. Second, paid career and volunteer personnel that were certified to perform both EMS and firefighting duties were unable to "cross the line" into the opposing agency's mission and thereby severely reducing the capability of personnel resources.

My research led me to find many authors who wrote on the subject of Fire and EMS working better together. The abundance of material available presented varying view points on the benefits and disadvantages of "pooling" or combining resources. One recurring theme heard over and over during the research process was that of culture, consolidation, and challenges. Webster defines culture as "The integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for learning and transmitting knowledge to succeeding generations." (Merriam-Webster On-Line, 2007). Quoting 2002 Volunteer Fire Chief of the Year, Tim Holman, Daniels wrote "The problem was just like everyone else is experiencing around the country...We couldn't get trucks out during the day, mainly for EMS. We just didn't have the staffing to do that, so I started talking to all the people in the organization and I said 'You know what? We're having problems getting trucks out. What do you see as the solution?'" (Daniels, 2002, p. 44).

My experience has been that the distinct and separate organizational cultures between the Ledyard Fire Company and the Ledyard Volunteer Emergency Squad (LVES) are a major obstacle to

a better utilization of resources. Fire and EMS cultures are inherently different, as discussed in the literature review. The Ledyard Fire Company is a tightly-knit close group of paid and volunteer professionals, many of which are close friends outside of the department. It is not uncommon for groups of firefighters to spend the night at the building having dinner, watching a movie, or washing a fire truck. The Ledyard Volunteer Emergency Squad (LVES) appears to have a more independent, individualistic culture. By this, I mean that personnel participate in required organizational activities (i.e. call response, training, etc.) and then go there separate ways, often with little interaction.

As Appendix D illustrates, over the past five years, the town ambulance service has missed an average of 15% of its' calls for service. This number is unacceptable and the Fire Company wanted to help. One solution that was implemented while writing this paper was to utilize medically certified firefighters to help fill ambulance crews. Although it has helped reduce the number of missed calls, in my opinion, it is only a "band aid" to the underlying problem. Purchase writes "What is clear is that there is no one way in which to deliver emergency medical service by a fire department. That decision will more than likely vary from department to department and region to region. Each Fire Chief must evaluate his own departments position within its community and decide whether or not the current level of service is both acceptable and stable." (Purchase, 1994, p. 30).

There is no doubt that leadership also plays a major role in the success of fire service leaders. After all, the Executive Fire Officer program is centered around leadership and professional development. In the Town of Ledyard, all of the emergency service department heads report to the mayor, who, by town charter, is the Director of Public Safety. It is clear from surveying local fire departments that there are few, if any, disadvantages to combining fire and EMS resources, and certainly the potential benefits are well worth pursuing. There is one obstacle. What happens when the fire department and ambulance are unable to agree on ways to improve resource utilization? The next higher decision making level is the mayor. Historically, the mayor reverts operational authority to emergency service operational issues to the subject matter experts, namely the department heads. The governmental operating structure of Ledyard is comprised of a mayor and town council, all of whom are elected officials. This can be a complicating factor in the process to combine and better utilize resources. The general philosophy is "If it isn't broke, don't fix it."

From what others have written on the subject, combined with survey results, personal interview results, and the compilation of EMS statistical response data, it comes as no surprise that there are many advantages to combining Fire and EMS resources in Ledyard, whereas there are very few disadvantages. It appears that both the Fire and EMS services have an interest in working together, however, leadership between both organizations and

support of the Town needs to be secured before any initiatives can be put into place.

There are several organizational implications of the study results for the Fire Company, Ambulance, the Town of Ledyard, and the most importantly, the citizens of Ledyard. First, for the Fire Company and Ledyard Ambulance, a more cohesive and dynamic relationship will be fostered among the two groups, sharing and cross-training personnel, coordinated equipment purchases, and uniform policies and procedures applicable to personnel from both disciplines. The Town of Ledyard will see reduced costs through consolidated budgeting, and strategic use of paid Fire and EMS personnel to perform multiple functions as needed. (After negotiating with labor unions). The citizens of Ledyard will be the ultimate winners. Residents will see less out of town mutual aid ambulances, as the number of missed calls will be significantly reduced. As a result of more efficient personnel utilization, response times will be reduced. The town will also realize an increase in ambulance billing revenue, as the number of missed opportunities to bill for service is reduced.

Recommendations

The ultimate goal of sharing resources between Fire and EMS services in the Town of Ledyard is to increase the service level that our citizens receive. To achieve this goal, operational

efficiency among both agencies must be improved. The following are recommendations to implement and achieve this goal:

1. Obtain buy-in from all stakeholders, including Fire and EMS service leaders, town leadership, other town agencies, and mutual aid partners;
2. Obtain buy-in from all of the volunteer emergency responders within both agencies;
3. Coordinate with the labor unions representing the full-time career Fire and EMS employees and negotiate cross-training and work assignments;
4. Analyze and examine agency budgets and determine ways consolidate expenditures;
5. Align policies and operating guidelines of both agencies to reflect the changes in Fire and EMS service delivery.

As part of this research project, Appendix E contains a draft action plan that outlines specific measures and timelines to enable a more efficient use of resources and meet the demands of the Fire and EMS agencies in the Town of Ledyard. If these research recommendations are fulfilled, the agencies, Town, and most importantly, the citizens of Ledyard will realize a substantial improvement in delivery of services and operational cost savings.

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Appendix A
Survey Cover Letter

November 8, 2006

Dear Chief,

I recently completed my final course in the Executive Fire Officer Program at the National Fire Academy titled *Executive Leadership*. I am conducting a research project relating to the course and my department that investigates ways that fire and emergency medical services can be delivered in a more efficient manner.

As part of my research, I developed a ten (10) question survey for local Fire Chief's on fire and emergency medical services resource utilization. Please take a few minutes to answer the questions and mail your responses back to me in the postage-paid envelope by November 24, 2006.

I am looking for honest answers and they will remain anonymous. If you have any written policies, procedures, standards, operating guidelines, etc. that may be of help, please forward them to me along with the survey.

If you would like a copy of the survey results and/or a copy of my research project, please indicate so at the end of the survey and leave your name and mailing address.

Any questions may be directed to me by e-mail at alexander.mrazik@ledyardesb.org or by calling the fire station at (860) 464-9222, ext. 18.

Sincerely,

Alexander R. Mrazik Jr.
Fire Chief

Enclosures - Fire and EMS Resource Utilization Survey
Postage-Paid Return Envelope

Appendix B

Fire and Resource Utilization Survey

1. What is the personnel makeup in your organization?
 - A. All volunteer - **25**
 - B. Combination paid and volunteer - **10**
 - C. All paid - **4**
2. What emergency medical services does your organization provide? (circle all that apply)
 - A. First responder (R1)- **24**
 - B. Basic life support, ambulance (R2)- **6**
 - C. Advanced life support, paramedic (R5)- **0**
 - D. Basic first aid - **0**
 - E. None - Go to Question 5 -**0**
3. Does your organization bill for emergency medical services delivery?
 - A. Yes - **14**
 - B. No - **25**
4. What percentage of your total call volume is comprised of emergency medical services responses?
 - A. Less than 10% - **1**
 - B. 11-25% - **0**
 - C. 26-50% - **4**
 - D. 51-75% - **25**
 - E. Greater than 75% - **9**
5. What is/are the benefit(s) to combined fire and emergency medical services resources in your organization? (circle all that apply)
 - A. More efficient use of personnel - **5**
 - B. Under one department - **4**
 - C. Revenue generated by ambulance billing - **1**
 - D. Uniform policies and procedures applicable to all personnel - **2**
 - E. Other: - **3**
 - F. None - **2**

6. What is/are the disadvantage(s) to combined fire and emergency medical services resources in your organization? (circle all that apply)

- A. Increased liability - 1
- B. Resources spread too thin - 4
- C. Certification/training requirements - 5
- D. Record keeping - 1
- E. Other: - 1

F. None - 17

7. In what ways can fire and emergency medical services organizations work better together to achieve a more efficient use of resources? (circle all that apply)

- A. Effective leadership and support from city/town officials - 0
- B. Multi-agency training - 3
- C. Common goals and objectives - 7
- D. Long term planning - 1
- E. Other: - 2

8. In your community, are firefighters cross-trained for both fire and ambulance duty?

- A. Yes - All personnel are cross-trained - 4
- B. Yes - 50% or more personnel are cross-trained - 13
- C. Yes - Less than 50% of personnel are cross-trained - 15
- D. No - No personnel are cross-trained - 4

9. In your community, do fire and emergency medical services personnel work as a cohesive team, with a shared vision?

- A. Yes, all of the time - 10
 - B. Yes, most of the time - 25
 - C. No, rarely - 0
 - D. No, not at all - 1
 - E. Other: - 0
-

10. Which provider type is most capable of providing the highest quality, most cost-effective and efficient delivery of emergency medical services in your community?

- A. Municipal/Town Ambulance Company - 6
 - B. Private Ambulance Company - 5
 - C. Fire Department - **24**
 - D. Neighboring Town's Provider - 0
 - E. Other: - 0
-

Appendix C

Personal Interviews

Robert Scialabba, Assistant Director, Ledyard Volunteer
Emergency Squad (LVES)

Date: January 3, 2007

Time: 8:45 P.M.

Location: Ledyard Emergency Services Building

Duration: 15 Minutes

Questions

1. In what ways can Fire and EMS better work together in the Town of Ledyard?

Response - Mutual respect for what we each do. Trust that we know what each of us are doing. Discuss/critique what when wrong at a scene.

2. What are the challenges of Fire and EMS services working together in the Town of Ledyard?

Response - People's perception of being in control, ambulance personnel turnover.

3. What can be done to overcome these challenges?

Response - Mentality, maintain control, working together, better communication. Being more involved with the fire department with motor vehicle accident/rescue incidents.

4. What is the number one operational priority in your organization?

Response - Retention and recruitment, keeping members.

Appendix C

Personal Interviews

Kathee Ivey, Director, Ledyard Volunteer Emergency Squad (LVES)

Date: January 4, 2007

Time: 5:45 P.M.

Location: Ledyard Emergency Services Building

Duration: 15 Minutes

Questions

1. In what ways can Fire and EMS better work together in the Town of Ledyard?

Response - Better communication, talking together.

2. What are the challenges of Fire and EMS services working together in the Town of Ledyard?

Response - Bringing different personality levels together.

3. What can be done to overcome these challenges?

Response - Social events and not all business.

4. What is the number one operational priority in your organization?

Response - The patient.

Appendix C

Personal Interviews

Richard Weiss, Fire Chief, Gales Ferry Volunteer Fire Company

Date: January 16, 2007

Time: 9:10 P.M.

Location: Ledyard Emergency Services Building

Duration: 19 Minutes

Questions

1. In what ways can Fire and EMS better work together in the Town of Ledyard?

Response - Common Standard Operating Guidelines (SOGs), training, communications.

2. What are the challenges of Fire and EMS services working together in the Town of Ledyard?

Response - Supplying resources, added growth.

3. What can be done to overcome these challenges?

Response - Identify resources, staffing on a 24-hour basis.

4. What is the number one operational priority in your organization?

Response - Training, how to entice volunteers how to maintain training requirements.

Appendix C

Personal Interviews

Ted Day, Assistant Fire Chief, Gales Ferry Volunteer Fire Company

Date: January 16, 2007

Time: 9:39 P.M.

Location: Ledyard Emergency Services Building

Duration: 21 Minutes

Questions

1. In what ways can Fire and EMS better work together in the Town of Ledyard?

Response - Establish a Board of Fire Commissioners.

2. What are the challenges of Fire and EMS services working together in the Town of Ledyard?

Response - Lack of volunteer base and no incentives for volunteers.

3. What can be done to overcome these challenges?

Response - Financial incentives for volunteers.

4. What is the number one operational priority in your organization?

Response - Training.

Appendix D

Town of Ledyard, Connecticut EMS Response Data

Calendar Years 2002 through 2006

Year	# Calls	# Missed	% Missed	Avg. Amb. on Scene	Avg. FD on Scene
2002	736	58	8%	14m, 24s	11m, 24s
2003	626	108	17%	14m, 48s	10m, 12s
2004	624	111	18%	13m, 12s	5m, 24s
2005	691	92	13%	19m, 12s	7m, 12s
2006	735	133	18%	20m, 48s	7m, 12s
5Yr Avg.	682	100	15%	16m, 29s	8m, 17s

Appendix E

Draft Action Plan

Steps to Providing a More Efficient Use of Fire and EMS
Resources in the Town of Ledyard

1. Fire and EMS department heads meet to discuss research study and achieve buy-in among all organizations - May, 2007
2. Department heads bring results to each agencies volunteer membership and full-time employees for consideration, comment, and recommendation - June through July, 2007;
3. Department heads meet with Director of Public Safety (Mayor) and Town Council to present findings and recommendations - July, 2007 through September, 2007;
4. Department heads, working with town leadership negotiate with labor unions to forge contractual agreements associated with cross-training and sharing job functions - September, 2007, through December, 2007;
5. Individual agency policies and operating guidelines are reviewed, and if necessary, re-written, to reflect the new operational philosophies - January 2008 through May, 2008;
6. Budgeting, training, and other coordination issues are reviewed and changes are implemented to coordinate with the new operational philosophy - January 2008 through June, 2008;

Appendix E

Draft Action Plan

Steps to Providing a More Efficient Use of Fire and EMS
Resources in the Town of Ledyard

7. On July 1, 2008, the new shared operational plan takes effect between Fire and EMS agencies for the Town of Ledyard.